

Claims:

1. A method of executing an instruction comprising:
determining if at least a portion of the instruction is stored in a loop buffer; and
determining if at least a portion of the instruction is stored in a cache.

5

2. The method of claim 1, wherein determining if at least a portion of the instruction is in a loop buffer includes determining if at least a portion of an address corresponding to the instruction is substantially equal to a tag address.

10

3. The method of claim 1, wherein determining if at least a portion of the instruction is in a loop buffer includes comparing at least a portion of an address corresponding to the instruction with at least a portion of a logic value stored in a tag register.

15

4. The method of claim 1, wherein determining if at least a portion of the instruction is in a loop buffer includes determining if at least a portion of the instruction is in first portion of a memory array, and wherein determining if at least a portion of the instruction is in the cache includes determining if at least a portion of the instruction is in a second portion of the memory array.

5. The method of claim 4, wherein determining if at least a portion of the instruction is in a loop buffer includes determining if at least a portion of the instruction is in first portion of a memory array, and determining if at least a portion of the instruction is in the cache includes determining if at least a portion of the instruction is in a second portion of the memory array, the first portion of the memory array being substantially contiguous with the second portion of the memory array.

6. The method of claim 1, further comprising loading a tag register after determining at least a portion of the instruction is in the cache.

7. The method claim 6, wherein loading the tag register includes loading a logic value that corresponds at least in part to a storage location in a memory array.

8. The method of claim 7, further comprising determining if at least a portion of an additional instruction is in a loop buffer by determining if at least a portion of the additional instruction corresponds to the logic value in the tag register.

9. A method of processing data, wherein a memory array includes a loop buffer, comprising:

determining if a first piece of data is in the loop buffer; and
enabling a portion of the memory array corresponding to the loop buffer.

10. The method of claim 9, wherein enabling a portion of the memory array includes enabling only the portion of the memory array comprising the first piece of data.

5 11. The method of claim 9, wherein the memory array further includes a cache, further comprising:

 determining if a second piece of data is in the cache if the second piece of data is not in the loop buffer.

10 12. The method of claim 11, further comprising:
 enabling the memory array if the second piece of data is not in the loop buffer.

 13. The method of claim 11, further comprising:
 loading a tag register with a first logic value corresponding, at least in part, to a
15 location of the second piece of data in the memory array.

 14. The method of claim 13, further comprising:
 determining if a third piece of data is stored in the loop buffer by determining if
 the first logic value stored in the tag register corresponds, at least in part, to the third
20 piece of data.

15. The method of claim 14, further comprising:

determining if the third piece of data is in the memory array if the third piece of data is not in the loop buffer; and

loading the tag register with a second logic value corresponding, at least in part,
5 to a location of the third piece of data in the memory array.

16. The method of claim 15, wherein loading the tag register with the second logic value includes loading the tag register with a logic value that is different than the first logic value.

10

17. The method of claim 11, wherein determining if the second piece of data is in the cache includes determining if the second piece of data is in the memory array.

18. The method of claim 9, further comprising:

15 disabling a tag look-up of the memory array.

19. The method of claim 9, further comprising:

providing at least a portion of the first piece of data to a digital signal processing core.

20. An apparatus having an integrated circuit, the integrated circuit comprising:
a memory array adapted to provide a loop buffer and a cache.

21. The apparatus of claim 20, wherein the integrated circuit further comprises a
5 digital signal processor.

22. The apparatus of claim 20, wherein the memory array has a first portion
adapted to provide the loop buffer and a second portion adapted to provide the cache,
the physical location of the first portion being fixed with respect to the second portion.
10

23. The apparatus of claim 20, wherein the memory array has a first portion
adapted to provide the loop buffer and a second portion adapted to provide the cache,
the physical location of the first portion being variable within the memory array.